The world's reactors No.83

Technical Data

8.19mm (0.322in)

9.5mm (0.374in)

0.57mm (0.022in)

2.1, 2.6, 3.1% U235

Silver - Indium - Cadmium

Boric acid chemical shim

158.3 bar a (2296 lb/in2)

18740 kg/s (149 x 106 lb/h)

172.4 bar a (2500 lb/in²)

Prestressed concrete - Steel lined

Containment fan cooler system

Emergency core cooling system

Tandem - one double flow h.p. cylinder;

three double flow l.p. cylinders

66.6 bar a (966 lb/in2)

Hydrogen 600 MWe

282°C (540°F) 955 kg/s (75.8 × 106 lb/h) 227°C (441°F)

Forced circulation

324.9°C (617°F)

Mixed flow

4.39m (173in)

13.55m (535in)

68 Burnable poison rod assemblies

41.3 kW/m

3.1% U235

33 000 MWd/tU

SS Type 304

Rated thermal power of reactor Net efficiency

Pellet diameter Pin diameter Clad material Fuel assemblies in core Linear fuel rating (maximum) Initial enrichments Feed enrichment

Fuel discharge burn-up (average) Control rod: Full length assemblies Absorber rods per assembly Neutron absorber

Primary coolant system Operating pressure (inlet) Reactor outlet temperature Coolant pumps: Number

Reactor pressure vessel Inside diameter Inside height (with the head) Wall thickness (core region) Material: Forgings

Design temperature

Inside diameter Emergency cooling systems Low head safety injection/residual Containment spray pumps Emergency charging pumps

Emergency diesels

Turbine-generator sets TSV temperature Steam flow rate

Generator cooling: Stator

Nominal gross electrical output

Thermal rating (nominal)

Nuclear Engineering International Central Electricity Generating Board © IPC Business Press Ltd., 1982 Sizewell, Suffolk, England. Sutton, Surrey, SM2 5AS, England.

28 Refuelling water tank

Key to power station 14 Control room air conditioning units cutaway 16 Data processing room 1 Turbine house

17 Safety equipment rooms 2 Unit and station boards 18 Lower cable spreading room 3 Battery room 4 Generator 5 Plant protection boards 6 Turbines 7 Turbine house cranes

19 Electrical equipment rooms 20 Essential switchgear rooms 21 Diesel building 22 Air coolers 23 Diesel generators 24 Exhaust silencers 8 Mechanical annexe 9 Ventilation plant room 25 Air intakes 10 Deaerators 26 Condensate tank 11 Water header tanks 27 Reactor make-up water tank 12 Access control annexe

29 Steam and feed valve cell

31 Vent stacks 32 Main steam isolation valves 33 Auxiliary feed pumps 34 Main component cooling water

heat exchangers 35 Pipe penetration room 36 Containment sump valves 51 Jib cranes 37 Auxiliary building 52 Steam generators 38 Component cooling water pumps 53 Refuelling machine 54 Hydrogen mixing fans

39 Component cooling water surge 40 Chute to resin charging tank 41 Valve room 42 Chiller surge tank

43 Reactor building 46 Spray headers

48 Maintenance truss

57 Containment coolers

58 Main steam lines

47 Polar crane

56 Pressurizer

Main feedwater pump

Reactor

60 Personnel access 61 Cavity cooling fan 62 Control rod drive mechanism cooling fans 63 Control rod drive mechanism 49 Ladder access to polar crane

59 Feedwater inlets

64 Flux mapping system 65 Emergency boron injection to 66 Reactor coolant pumps 67 Reactor pressure vessel

68 Primary coolant, pump to reactor 69 Primary coolant, steam generator to pump 70 Primary coolant, reactor to

steam generator

71 Accumulators 72 Instrumentation cables 73 Pressurizer relief tank 74 Fuel transfer tube 75 Fuel building

76 Pond fuel handling machine 77 Flask handling crane 78 New fuel elevator winch 79 Loading bay hatch cover 80 Hatch cover drive mechanism

84 Flask preparation bay

86 Flask transporter

85 New fuel assembly room

81 Fuel storage pond 82 Fuel transfer canal 83 Flask filling bay

91 Fuel storage pond cooling system heat exchangers 92 Fuel reception bay 93 Radioactive waste process storage

94 Laundry and hot shower tank 95 Waste monitor tanks 96 Demineralizers

97 Filters

98 Re-cycle tanks

Key to site plan 88 Fuel storage racks Reactor building
 Mechanical annexe c Turbine hall

89 Fuel transfer carriage 90 Fuel storage pond cooling

m Reactor make-up water tank

n Refuelling water tank

Hydrogen release tank

d Fuel building Auxiliary building Control building

g Diesel building h Access control annexe Generator transformers k Radioactive waste process and storage building Condensate tank

y Water treatment building z Hydrogen store aa Secondary diesel and control

ab Workshop.

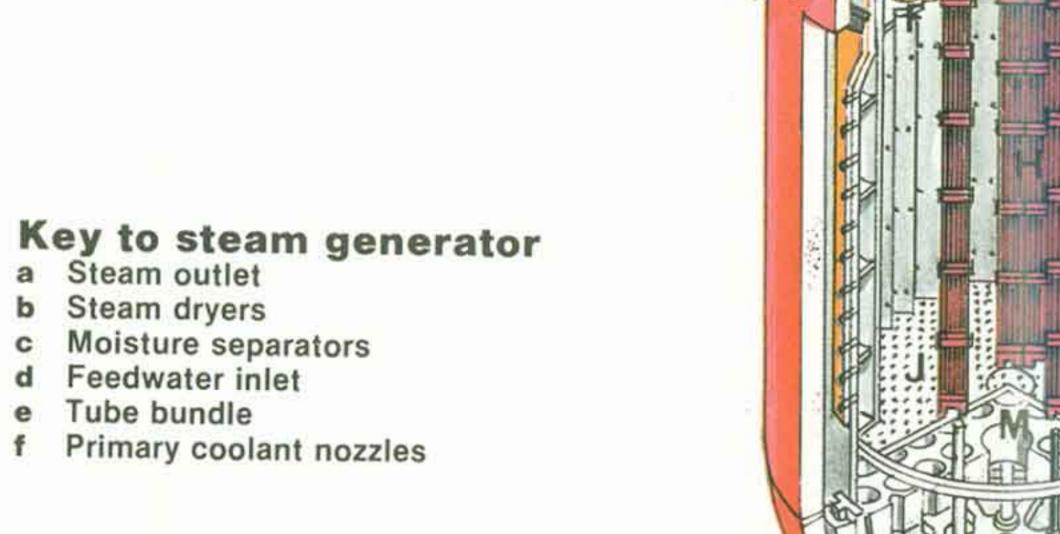
ac Welfare building

ad Administration building

p Hydrochlorite building q Cooling water pump house r Surge chambers s Hydrogen and carbon dioxide store t Reserve ultimate heat sink u Sub-station v Gate house

w 400KV sub-station x Fire-fighting pump house

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Key to reactor

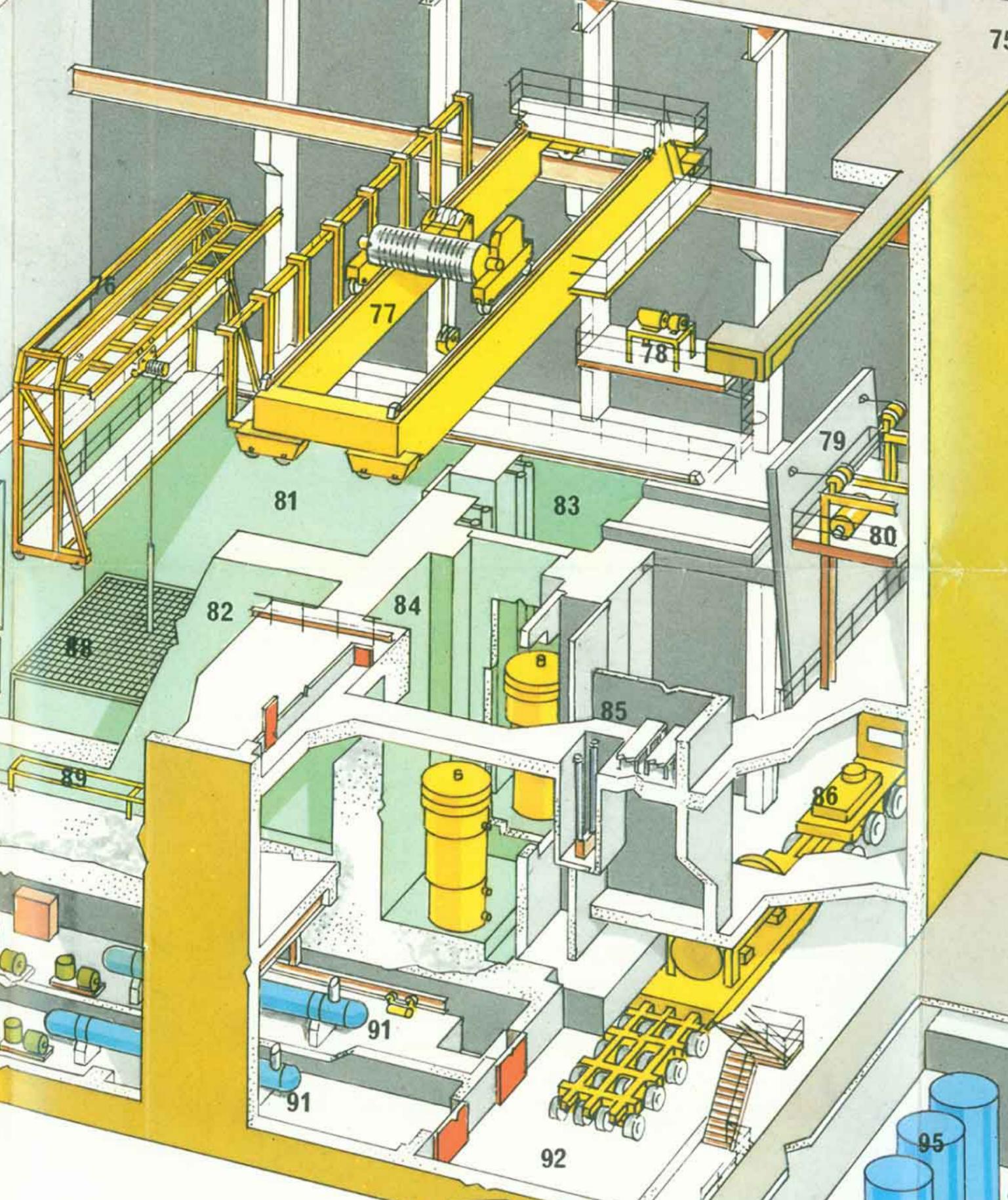
A Control rod drive mechanism

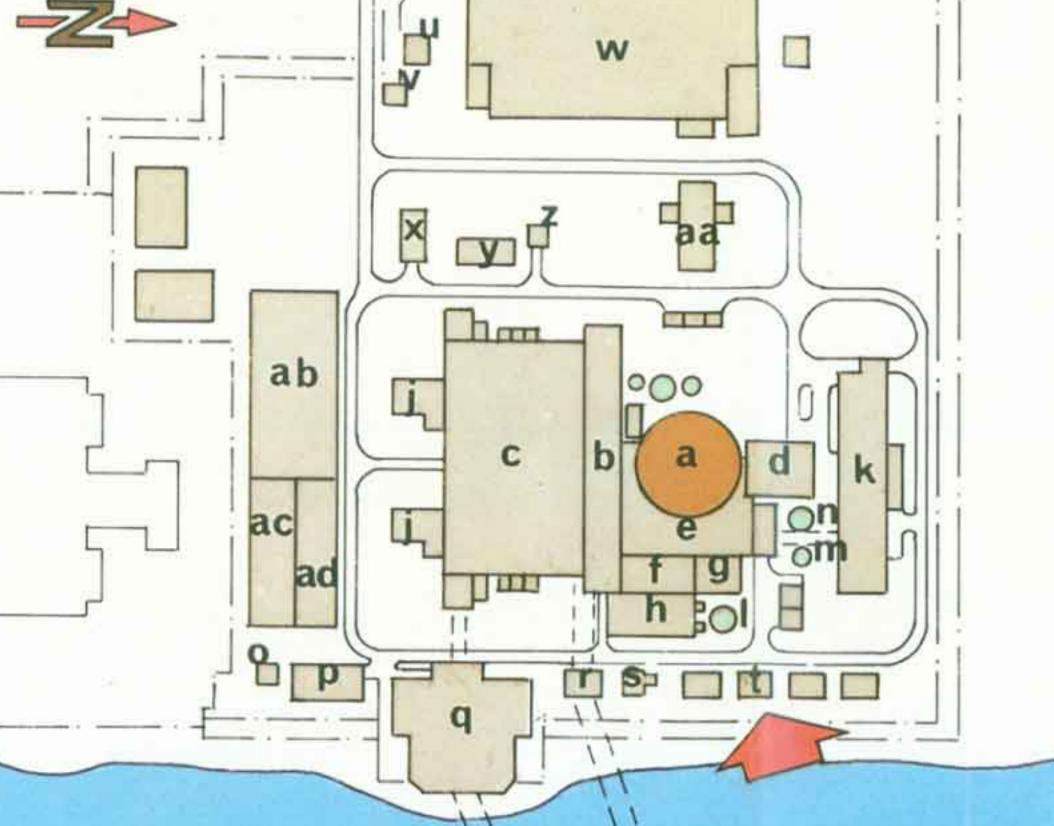
B Thermal sleeve

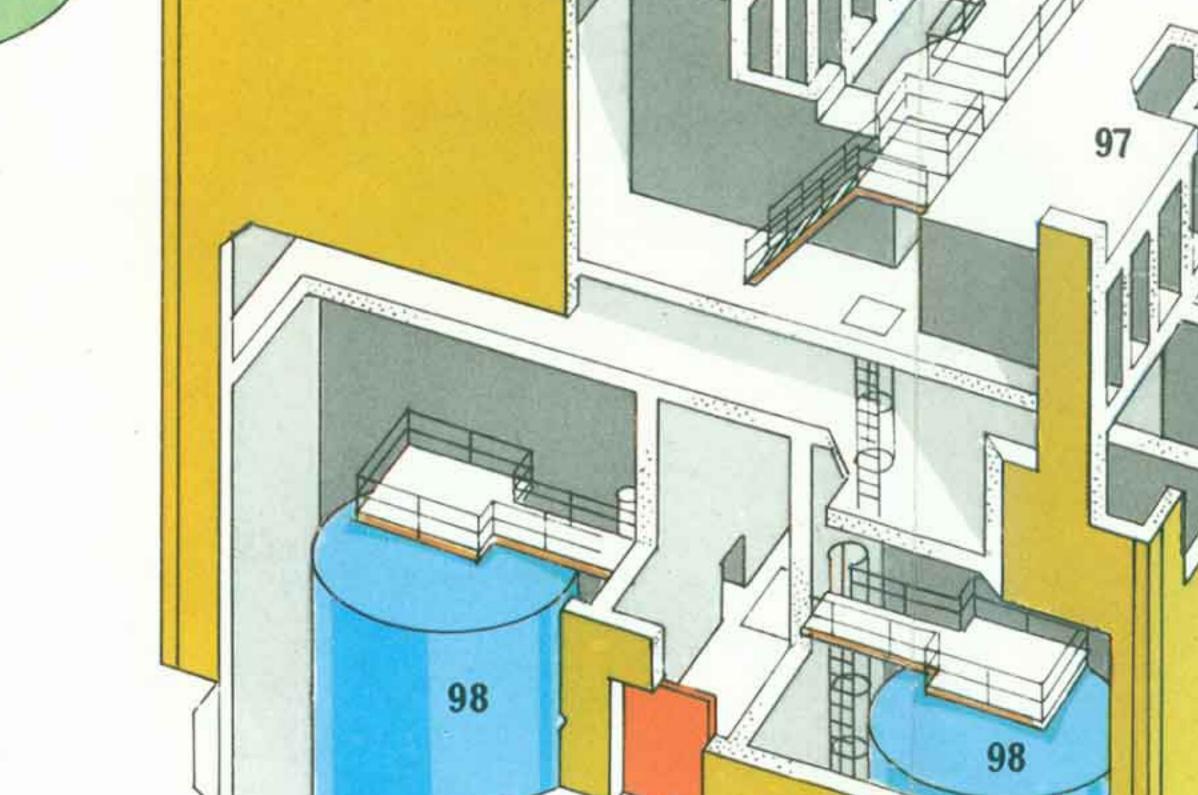
Reactor vessel

D Core barrel

Upper support plate







JOHN WAY